

Plica Neuropatica in a Patient With Schizophrenia: A Case Report

Dogancan Sonmez, MD,¹ Nursel Dilek, MD,² and Cicek Hocaoglu, MD¹

¹ Recep Tayyip Erdogan University Faculty of Medicine, Department of Psychiatry, Rize, Turkey

² Recep Tayyip Erdogan University Faculty of Medicine, Department of Dermatology, Rize, Turkey

ABSTRACT

Plica Neuropatica (Plica polonica) is a common but rarely reported scalp disease. In a localized area, the hair of the scalp is irregularly twisted and irreversibly entangled in the form of a natural hair bun. Mental disorders are a risk factor for plica formation. In this study, we will discuss the case of plica neuropatica in a 46-year-old schizophrenic patient with decreased self-care and predominantly negative symptoms with social withdrawal. Early diagnosis and treatment of the underlying psychiatric disease will prevent the formation of plica.

INTRODUCTION

Plica polonica is a hair ball in which the scalp forms a malodorous, crusty, sticky, moist mass (1). The first records of plica polonica date back to 2500 BC. The Hindu God Shiva and his followers referred to it as “JaTaa” in India’s Vedic scriptures. “JaTaa” means twisted hair locks. This term is derived from the Dravidian word “CaTai” which probably means to “twist or to wrap”. Later, this situation was described in Poland in the 19th century (2). When Le Page described a 17-year-old girl who had a hysterisis in 1884, she used the term “plica polonica” (1). Le Page attributed this strange phenomenon to “nerve force” while the parents of the child considered it a “visitation from God” (3). This was historically linked to a common condition of scalp hairs in Poland in the 19th century. So

it was called “plica polonica”, which means Polish fold. It was characterized by a foul-smelling inflamed scalp that was often heavily infected with lice (4). The hair became a thick, moist mass due to inadequate hair care. Poles wear tight fur hats and the superstitious belief that bad scalp is healthy contributed to the frequency of plica polonica in Poland (4). Some of the reported risk factors for plica polonica are psychological disorders, secondary scalp infection, various drug uses, and the use of shampoos containing cationic detergent (5). In psychiatric disorders such as schizophrenia, mood disorders, intellectual disability, and even dementia, where patients were neglectful to personal cleanliness, the risk of developing plica polonica increases (6). Although plica polonica is well defined, its association with psychiatric disorders has not been adequately investigated and a limited number of cases have been reported. In this case report, we present a patient with plica polonica accompanying a schizophrenic diagnosis in the light of literature.

PATIENT INFORMATION

CASE HISTORY

Ms. R. is a female patient that 46 years old, single, university graduate, living with her mother. She was admitted to our psychiatry outpatient clinic by her mother. The patient had complaints such as not taking a bath, stagnation, desire to be alone, and being closed. Her first complaints started 25 years ago while she was studying at the university. The patient’s complaints started in the form of moving away from people and doubting the people around her. After being married for a year, the patient’s complaints increased. After graduating from university, she could not start her job because she had doubts that her husband would hurt her. The patient, who started a contract job, had problems because of her suspicions and could not continue her job

Financial support and sponsorship: None

Conflicts of interest: There are no conflicts of interest.

Address for Correspondence: ✉ Dogancan Sonmez, MD, Recep Tayyip Erdogan University Faculty of Medicine, Department of Psychiatry, Rize, Turkey 📧 dogancansonmezz@gmail.com

and applied to the psychiatry polyclinic with the request of her family. Then she was evaluated for the first time and treatment was started. The patient was moved to Istanbul away from her family and she was treated in a psychiatric hospital with compulsory hospitalization due to the significant increase in her complaints. The complaints of the patient negatively affected her social life. Olanzapine treatment was initiated while the patient was hospitalized in a psychiatric hospital in Istanbul. The dosage of olanzapine was gradually increased to 20 mg / day. An improvement was observed in the patient's current complaints. The patient recovered and was discharged. She returned to Rize after she was discharged. She started running a painting workshop in Rize. She taught private lessons for a period of time. The patient gained approximately 35 kg during this period. The patient stopped using the medication due to weight gain. Approximately 7-8 months after stopping drug treatment, thoughts of persecution such as doubting the environment, being harmed, and poisoning began to occur. Complaints such as withdrawal, getting away

from crowded environments, not speaking were added. Upon her current complaints, the patient was first hospitalized in the psychiatry clinic of our university in Rize and began treatment. The patient had conditions such as insomnia, anorexia, intense doubts, not eating, not drinking water, and decreased self-care. Considering the current condition of the patient, clozapine treatment was initiated. The clozapine drug dose was gradually increased up to 400 mg / day. Aripiprazole 5mg / day was added to the treatment of the patient who had more sedation in the morning and spent the day in bed continuously, and the aripiprazole dose was increased to 10 mg / day in the controls. The patient's drug compliance was increased. The patient had decreased nervousness and suspicion. The patient's medication compliance was increased during the hospitalization period. Supportive interviews were made. Psychoeducation was given. The patient recovered and was discharged. After discharge, the patient did not have regular psychiatric examination follow-ups. After a while, the patient stopped using her current medications.

Figure 1.

Long, thick crusted, moist matted mass of hair in occipital area before treatment



Figure 2.

Healthy hair of the patient after treatment



*After obtaining permission from the patient and her guardian, the plate areas were photographed and recorded for comparison before and after the treatment.

Personal Background: She was born at home with normal birth and there was no problem in her growth and development. She has no family history of psychiatric or neurological disease

CLINICAL FINDING

Physical Examination and Laboratory Findings: Physical examination and routine laboratory tests were observed naturally during the first hospitalization. The patient's self-care gradually diminished, and she did not wash and did not provide personal care. The patient's skin was oily and scaly on examination of the scalp. There was a firm to hard mass of matted hair over the vertex and occiput and extending down for a length of 30 cm. There were no signs of inflammation or infestation.

TIMELINE

The patient, diagnosed with schizophrenia, was brought to the psychiatry outpatient clinic by her mother. The patient had intense persecution and reference delusions. It was learned that she had eaten very little for the last month and had no oral consumption for the last six days. It was stated that the patient had not taken any bath for about five years because she thought the water was toxic. The patient's self-care was significantly reduced and there was a significant weight loss. The patient was admitted to the psychiatry service of our university in her current state. Olanzapine treatment was started for the patient. The dosage of olanzapine was gradually increased to 20 mg / day. Since electroconvulsive therapy (ECT) was not available in our psychiatry clinic, we did not choose ECT in the treatment of the patient. In addition to pharmacological treatment, psychotherapies were given. Psychoeducation was given to the patient and her relatives. The patient was hospitalized for 32 days.

DIAGNOSTIC ASSESSMENT

Cranial magnetic resonance imaging (MRI) and electroencephalogram (EEG) of the patient were normal. Her laboratory tests taken at admittance (thyroid function, vitamin B12, folate, ferritin, complete blood count, biochemistry parameters) were in the normal range. During the first hospitalization, Brief Psychiatric Rating Scale(BPRS): 27P, Scale For Assesment of Positive Symptoms(SAPS): 22P, Scale for the Assessment of Negative Symptoms(SANS): 43P results were obtained. Olanzapine treatment was initiated and the patient's symptoms regressed after treat-

ment. During discharge, BPRS: 12P, SAPS: 13P, SANS: 29P results were obtained.

Mental Health Examination: The patient was conscious, orientated, cooperative and had limited eye contact. The amount of speech was decreased, her volume was low, she was angry in the style of question and answer. The female patient showed appropriately for her age visual and auditory hallucinations in perception, concealing the content of thought. During the clinical course, her ability to judge and evaluate truth was impaired. Thought content includes persecution and reference delusions. Her relationship and expressive behavior was diminished.

THERAPEUTIC INTERVENTION

The patient, who was diagnosed with schizophrenia, was started on olanzapine treatment because she had used it before and had benefited. The olanzapine dose was gradually increased to 20 mg/day. Psychoeducation was given to the patient in addition to pharmacological treatment. Supportive interviews were made with the patient. Personal hygiene and self-care training was given to the patient. The dermatology department was consulted while the patient was an inpatient. The patient was diagnosed with plica neuropatica. The patient's hair was cut in line with the recommendations of the dermatology department. Hair care of the patient was done with special shampoos. Personal hygiene and self-care tasks were given to the patient.

FOLLOW-UP AND OUTCOMES

The patient was discharged with olanzapine 20 mg / day treatment. From the pre-discharge psychometric scales, BPRS decreased from 27P to 12P, from SAPS 22P to 13P, from SANS 43P to 29P. The clinical condition of the patient supported the scale results. The patient's self-care improved, her communication with the environment increased, her appetite improved and insomnia decreased. The patient's hair was healthy. The patient, who has been followed up in an outpatient clinic for 10 months, continues on olanzapine 20 mg. In bilateral interviews with the patient, who came to the polyclinic regularly, it was found that the patient did not have an active complaint.

DISCUSSION

Plica polonica is known by various names in different cultures. These, Plica Neuropatica, Dreadlocks, Jataa, Bird's nest. The dreadlocks first appeared on Egyptian artefacts. In the Old Testament (the story of Samson and Delilah) a man's power is mentioned directly related to the "seven

locks in his head". The term "plica neuropathy" was first used by Le Page in 1884 in patients with hysteria. It was used to describe a sudden entangled hair phenomenon (3). Also, both eastern and western traditions maintain that bodily, mental, and spiritual energies emanate from the body mainly from the top of the head and from the hair. People in this society believed that if the hair gets knotted, the energy stays in the hair and body and keeps the person stronger and healthier.

Plica polonica was a common condition on the scalp in Poland in the 19th century due to poor hair care. The Polish tradition of wearing tight fur hats and the superstition that a lousy scalp is healthy contributed to the increase in the frequency of this condition in Poland (4).

In India, the first records of plica neuropathy or dreadlocks date back to 2500 BC. It is mentioned by the Hindu god Shiva and his followers, which means hair curls reported as "JaTaa" in the Vedic scriptures. In Hindu culture it is a common religious custom to raise a plica for wish fulfillment or to have divine image in public. In general, the common superstition is that this condition heals internal diseases and the fact that the hair is cut leads to illness. It is commonly observed among "sadhus" who have chronic unkempt hair (5).

This entity has been found to be associated more in women who have psychiatric problems. This could probably due to the repeated manipulation of the hairs by the women who have psychiatric problems. Hysteria was described as a prominent feature in five out of seven women previously reported with a diagnosis of plica polonica. Plica polonica has been reported in adults as well as children. An 11-month-old Hindu boy has been presented in the literature as a case report (6). Psychiatric disorders such as schizophrenia, mood disorders, mental retardation even dementia may affect the personal hygiene of the patients and cause the formation of plica polonica.

Other than patients with psychiatric problems, many saints and individuals involved in rigorous spiritual their personal hygiene, may also have plica polonica (7). In the diagnosis of plica polonica hair is easy as it has a typical appearance as a single solid mass with irreversibly entangled. The hair is hard and may be tangled with dust and dirt. It may be accompanied by a bad smell. The formation is called "bird's nest" since that is what it resembles. It gives a very untidy look and may also be infested with lice. The hair has irregular twists and is hopelessly tangled: it is a hard mass of hair which is cemented by various things such as dirt, pus, and blood. The rest of the scalp appears bald and inflamed.

The exact etiopathogenesis of plica neuropathica is unknown; vigorous friction, frequent use of harsh shampoos leading to longitudinal splitting and weathering of hair shaft, poor hair care and neglect resulting in scalp infestations and pyodermas are the reasons postulated. Mental conditions such as schizophrenia, depression, hysteria are increase plica polonica. Pyoderma of scalp, taking some specific medication, e.g., azathioprine, febrile illness, excessive sweating on the scalp, wearing tight caps of scarves that increase friction on the scalp may cause plica polonica (8). Daily life activities are all the activities of the individual during the day such as self-care, dressing, eating, bathing, toilet hygiene, sleeping, cleaning the house. Shopping, transportation, money management, travel, cooking and household chores are auxiliary daily living activities. The independence level of daily life activities and auxiliary daily living activities play important role in social participation. Individuals with schizophrenia have significantly affected the level of functionality in one or more major areas, such as work, interpersonal relationships, and self-care over the period since the onset of the disorder.

When the literature is examined, it is noteworthy that the treatment of schizophrenic individuals is mostly in the psychopharmacological and psychoeducation dimension, and intervention programs aiming at the participation of activities remain in the minority (9). Increasing the independence and social participation of individuals with schizophrenia in the activities of daily living with individual-centered activity-based occupational therapy programs is an important part of the treatment process. Interdisciplinary teamwork is possible for individuals with schizophrenia to be more competent in their daily lives and social participation. Increasing the independence of individuals with schizophrenia in daily life activities and realizing social participation is an important part of the rehabilitation process with individual-centered activity-based ergotherapy programs planned and implemented by the occupational therapist within the interdisciplinary team.

When the literature was examined, it was found in a study about caregivers of schizophrenia individuals that caregivers had the most difficulty in bathing activities. In another study (individuals with schizophrenia) stated that they could not be independent in bathing activity. It is thought that by improving their bathing activity through daily life activity training, it would contribute to decrease the physical burden of and the risk of problems such as plica polonica (9).

In our country, mental health services for patients diagnosed with schizophrenia and similar severe mental disorders are carried out based on hospitals, and through the Community Mental Health Centers (CMHC) that have been opened in recent years, mental education, mental social skills training, cognitive behavioral therapy, and mental education for the families of the patients. and services such as home visits are provided. With these services, it is aimed not only to alleviate symptoms, but also to reintegrate patients into society and to reduce hospitalization rates. It has been found that CMHC services are very useful in increasing the quality of life of patients diagnosed with schizophrenia, decreasing the symptoms and disability, and increasing their functionality (10).

The most important step in the treatment of plica polonica is to confirm the diagnosis. Trichoscopy can be used to detect hair twist, hard keratin mass formation, and nits and lice infestations. Severe plica polonica is often difficult to treat. While people with psychiatric disorders may become aggressive during treatment, those with religious beliefs may refuse treatment altogether. Hair should be thoroughly washed with shampoo in the early stages of plica polonica. Entangled hair should be separated manually using organic solvents. In the case of severe plica polonica, where scalp inflammation, lice infestation, and hard keratin mass formation are observed, broad spectrum oral antibiotics can be used to treat bacterial infection and to treat insecticides such as cutting of matted hair, complete head shaving, 1% permethrin lotion for lice infestation. Early diagnosis and treatment of the underlying psychiatric disease will prevent the formation of plica. In addition, all plica patients should be screened by a psychiatrist for detailed psychiatric evaluation. Treatment of plica neuropathy involves the cutting of matted hair and hair care measures such as regular cleaning of the hair with mild cleanser or shampoo.

PATIENT PERSPECTIVE

She stated that after pharmacological treatment and supportive interviews, the patient's depressive, introverted, pessimistic thoughts decreased and she felt better. After this treatment, the patient's complaints improved. She

stated that the patient's self-care improved, her social adaptation increased, and she started to enter social and crowded environments on her own.

CONCLUSION

The exact etiopathogenesis of plica polonica is unknown. Predisposing factors are physical factors, infections, allergens, chemicals, drugs, and psychiatric disorders. Psychological risk factors range from neurotic diseases such as hysteria and anxiety to psychotic diseases. The final common pathway seems to be poor care and neglect causing longitudinal splitting or weathering of hair shafts. Early diagnosis and treatment of the underlying psychiatric disease will prevent the formation of plica. In addition, all patients with plica polonica should be screened by a psychiatrist for detailed psychological evaluation.

INFORMED CONSENT

Before the case presentation, the patient was informed about the study and informed consent was obtained.

References

1. Kumar PN, Antony B, Chakravarthy A, Koyamu AM. Plica neuropathica (polonica) in schizophrenia - a case report and review of literature. *Indian J Psychiatry* 2001;43:281-283.
2. Friedli A, Pierriard-Wolfensberger J, Harms M. Plica polonica in the 21st century. *Der Hautarzt; Zeitschrift für Dermatologie, Venerol, und Verwandte Gebiete* 2000;51:201-202.
3. Le Page JF. On neuropathic plica. *Br Med J* 1884;26:160.
4. Suresh Kuma PN, Rajmohan V. Plica neuropathica (polonica) in schizophrenia. *Indian J Psychiatry* 2012;54:288-289.
5. Simpson MH, Mullins JF. Plica neuropathica: Report of a case. *Arch Dermatol* 1969;100:457-458.
6. Verma S, Thakur BK. Plica "neuropathica" in an 11-month-old boy. *Pediatr Dermatol* 2014; 31:116-117.
7. Kar SK, Singh J, Singh P. Dermatitis neglecta and plica polonica in schizophrenia: Rarely encountered or rarely discussed. *Int J Trichology* 2016;8:100-101.
8. Parker C. Felted hair untangled. *J Am Acad Dermatol* 1989;20:688-690.
9. Haertl K. Occupational therapy in mental health: A vision for participation. *Occup Ther Ment Heal* 2019;35(4):422-423.
10. Ensari H, Gultekin BK, Karaman D, Koc A, Beskardes AF. The effects of the service of community mental health center on the schizophrenia patients evaluation of quality of life, disabilities, general and social functioning a summary of one year follow up. *Anatolian J Psychiatry* 2013;14:108-114.